

An object of the present invention is to provide a thermostable DNA polymerase with enhanced amplification efficiency and/or improved fidelity in polymerase chain reaction (PCR), and provide a process for production thereof. More specifically, the present invention provides thermostable DNA polymerase wherein in the DX<sub>1</sub>EX<sub>2</sub>X<sub>3</sub>X<sub>4</sub>H sequence (D: aspartic acid, E: glutamic acid, H: histidine, X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub> and X<sub>4</sub>: any amino acid) consisting of DX<sub>1</sub>E sequence within the EXO I region and a four amino acid length peptide adjacent to said glutamic acid(E) of thermostable DNA polymerase having 3'-5' exonuclease activity, histidine(H) has been replaced by another amino acid.